

37

Notice of Allowability

Application No.

10/721,638

Examiner

Zeev Kitov

Applicant(s)

SATO, BUNYA

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 09/14/07.
2. ☒ The allowed claim(s) is/are 4 - 8.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Examiner acknowledges a submission of the amendment and arguments filed on September 14, 2007. Claims 4, 7 and 8 are amended. Amendment and arguments have overcome rejections under 112, 2nd paragraph and 103(a).

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Please cancel Claims 9 – 17.

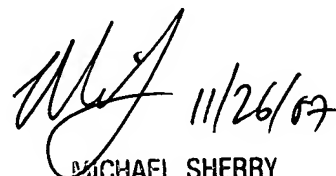
REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

An amended independent Claim 4 discloses, inter alia, following: a shut-off holding unit connected between the battery cell positive terminal and an external negative terminal of the protection circuit, comprising a resistor block of resistance larger than 1 kohm and smaller than 200 kohm; and a detector in parallel with the resistor block for detecting voltage between an external plus terminal and the external minus terminal; the shut-off holding unit maintains the discharge shut-off in the open position, and said discharge shut-off switch closes to recover discharge upon detection

by the shut-off holding unit of a predetermined voltage between the external plus and minus terminals.

The closest references for the claim are Applicant Admitted Prior Art (AAPA) and Lieser (US 3,480,940). AAPA discloses following elements of the claim: a battery pack including a battery cell and a protection circuit for shutting off overcurrent discharge, wherein the protection circuit including: a detector (18 in Fig. 29) for detecting voltage between an external plus terminal and the external minus terminal; wherein the load is inherently connected to the external plus terminal and the external minus terminal of the battery ([0018]), wherein abnormal discharge by shorting or connecting a low resistance between the external plus terminal and the external minus terminal of the battery pack is shut off ([0021] – [0025]), and the discharge shut-off is released to recover discharge upon detecting by the detector (18 in Fig. 29) a presence of a predetermined voltage between the external plus terminal and the external minus terminal of the battery pack ([0020]). However, it does not disclose the shut-off-holding unit, i.e., a resistor block with predetermined resistance connected in parallel with the detector. Lieser discloses the batteries (30 in Fig. 1) provided with resistors (34 in Fig. 1) connected between the battery terminals. However, the Lieser's resistors are used to adjust a discharge rate to keep the battery voltage above a predetermined minimum while the appliance is operating at a normal level. Lieser does not disclose or suggest a shut-off holding unit including a resistor block and a detector for detecting the voltage between external terminals.



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